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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/531,473

08/03/2005

Christian Simon

05056

6213

23338 7590 06/02/2009
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EXAMINER

FEELY, MICHAEL J

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

06/02/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/531,473	Applicant(s) SIMON ET AL.	
	Examiner Michael J. Feely	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 8-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 15-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20090515</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Pending Claims

Claims 1-20 are pending.

Election/Restrictions

1. Claims 8-14 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was *effectively* made **without** traverse in the reply filed on August 19, 2008.

Response to Arguments

2. Applicant's arguments, see page 12, filed March 2, 2009, with respect to the provisional double patenting rejection(s) have been fully considered but they are not persuasive. A double patenting rejection is not the same as a prior art rejection – *see MPEP 804*. Prior dates are not necessary because double patenting relates to both patented applications and *co-pending* applications.

3. Applicant's arguments, see the bottom of page 8 through the top of page 12, filed March 2, 2009, with respect to the prior art rejection(s) of claim(s) 1-7 & 15-20 have been fully considered and are persuasive. The Examiner agrees that neither Kron et al. nor Hughes disclose a hardener in the form of a *sol*. Therefore, the rejections have been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Krass et al. (DE 10117338 A1).

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- The rejection of claims 1-7 and 15-19 under 35 U.S.C. 102(b) as being anticipated by Kron et al. (US 2002/0018900) has been withdrawn.
- The rejection of claims 1, 5, 7, and 15-19 under 35 U.S.C. 102(b) as being anticipated by Hughes (US Pat. No. 5,786,032) has been withdrawn.
- The rejection of claims 2-4 and 6 under 35 U.S.C. 103(a) as being unpatentable over Hughes (US Pat. No. 5,786,032) in view of Kron et al. (US 2002/0018900) has been withdrawn.
- The rejection of claim 20 under 35 U.S.C. 103(a) as being unpatentable over Hughes (US Pat. No. 5,786,032) or Kron et al. (US 2002/0018900) has been withdrawn.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 15-17 and 19-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 15-17, it is not immediately clear what ***more or less free amino groups*** means. It is unclear if they truly are *free (un-reacted)* or not. Furthermore, once *converted*, it is unclear how these materials maintain their function as *hardeners for curing of epoxy resins*. This is particularly unclear when all of the amino groups are consumed by conversion, yielding a non-reactive particle.

Regarding claims 19-20, variable *B* and *Y* of the silane-based hardener are not defined.

Claim Rejections - 35 USC § 102/103

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 7, and 15-19 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Krass et al. (DE 10117338 A1).

Regarding claims 1, 7, and 15-19, Krass et al. disclose: **(I)** a hardener for curing of epoxy resins (Abstract; paragraph 0010 (*component b*); paragraph 0013), wherein the hardener comprises a sol prepared by controlled hydrolysis and condensation (paragraph 0013) of compounds of the type:



where $n = 1$ (paragraph 0013), $X = NR_1R_2$, both R_1, R_2 being hydrogen (paragraph 0013), B is a spacing group chosen from saturated or unsaturated C_1 - C_{18} -alkylene and substituted or non-substituted arylene (paragraph 0013), and Y is chosen from hydrolysable groups such as alkoxy, carboxyl, and halogen (paragraph 0013);

(7) wherein the hardener also comprises at least one additive (paragraph 0010 (*component c*); paragraphs 0015-0016);

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(15) wherein more or less free amino groups at the surface of the particle-forming condensation product in the sol has been entirely or partly converted with reactive compounds *such as* epoxides, acid derivatives, blocked and non-blocked isocyanates and compounds of the type R-X where X is a suitable atom or atom group that may be replaced and R is an organic residue or a fraction of such residue (*consumed when reacted with epoxy resin; furthermore, scope is open to any reactive compound: see “such as” language*); (16) wherein X is chosen among halogen, substituted or non-substituted alkoxyl, phenoxy, amine, carboxylate, sulphonate, sulphinate, phosphonate and phosphinate (*not required: scope open to any/full list of reactive compounds in claim 15*); (17) wherein R is chosen among non-substituted saturated and unsaturated C₁-C₂₄ alkyl, substituted saturated or unsaturated C₁-C₂₄ alkyl, substituted or non-substituted aryl, aliphatic or aromatic carbonyl, wherein the carbon chains of said compounds may optionally include one or more of the elements nitrogen, sulphur, silicon and boron and groups chosen among condensation products of one or more type of chemical compounds such as acids, alcohols, phenols, amines, aldehydes and epoxides (*not required: scope open to any/full list of reactive compounds in claim 15*);

(18) a cured epoxy material (paragraph 0010), manufactured from an epoxy resin (paragraph 0010 (*component a*); paragraphs 0011-0012) and a hardener as defined by claim 1 (paragraph 0010 (*component b*); paragraph 0013);

(19) a method for curing epoxy resins (paragraph 0010), comprising:

i) producing a stable sol by controlled hydrolysis and condensation (paragraph 0013) of silane compounds of the type:



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where $n = 1$ (paragraph 0013), $X = NR_1R_2$, both R_1 , R_2 being hydrogen (paragraph 0013), B is a spacing group chosen from saturated or unsaturated C_1 - C_{18} -alkylene and substituted or non-substituted arylene (paragraph 0013), and Y is chosen from hydrolysable groups such as alkoxy, carboxyl, and halogen (paragraph 0013); and that

ii) the sol, subsequent to possible storage, is mixed with an epoxy resin so that the latter is cured (paragraph 0010).

Krass et al. fail to explicitly disclose: *(I) a hardener which produces materials with high abrasion resistance, photostability and chemical resistance.* However, it appears that the hardener of Krass et al. would have been inherently capable of *producing materials with high abrasion resistance, photostability and chemical resistance* because it satisfies all of the material/chemical limitations of the instantly claimed hardener. In light of this, it has been found that, “Products of identical chemical composition can not have mutually exclusive properties.” A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present – *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Therefore, it appears that the hardener of Krass et al. would have been inherently capable of *producing materials with high abrasion resistance, photostability and chemical resistance* because it satisfies all of the material/chemical limitations of the instantly claimed hardener.

Claim Rejections - 35 USC § 103

9. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Krass et al. (DE 10117338 A1).

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Regarding claim 20, the teachings of Krass et al. are as set forth above and incorporated herein. They fail to explicitly disclose: **(20)** wherein unwanted reaction products from step i), such as alcohols and water, are removed from the sol prior to step ii). However, this step merely represents a purification of the “hardener”. In light of this, it has been found that the purification of an old product is *prima facie* obvious – see *MPEP 2144.04 VII*. Furthermore, the skilled artisan would have readily recognized that the removal of these materials, especially water, would have provided some shelf-stability to this *hydrolysis/condensation* product by preventing further condensation (polymerization).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to remove unwanted reaction products from the “hardener” in Krass et al. because this removal merely represents a purification of the “hardener”. Furthermore, the skilled artisan would have readily recognized that the removal of these materials, especially water, would have provided some shelf-stability to this *hydrolysis/condensation* product by preventing further condensation (polymerization).

10. Claims 2-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krass et al. (DE 10117338 A1) in view of Hata et al. (US Pat. No. 6,033,749).

Regarding claims 2-7, the teachings of Krass et al. are as set forth above and incorporated herein. Krass et al. disclose that their composition (including hardener) is useful for the production of fuel tanks; however, they fail to explicitly disclose: **(2)** wherein the hardener also comprises at least one UV-absorber; **(3)** at least one free radical scavenger; **(4)** at least one antioxidant; **(5)** at least one dye and/or pigment; and **(6)** at least one filler.

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The teachings of Hata et al. are directed to a fuel tank of multilayer construction (*see Abstract*). They disclose that each layer may be incorporated with: **(7)** additives (*see column 6, lines 27-30*), such as **(3)** free radical scavengers (*see column 6, lines 31-35; antioxidants act as free radical scavengers*), **(4)** antioxidants (*see column 6, lines 31-35*), **(2)** UV light absorbers (*see column 6, lines 35-43*), **(5)** colorants, such as pigments or dyes (*see column 6, lines 51-52*), and **(6)** fillers (*see column 6, lines 53-54*). The teachings of Hata et al. demonstrate that these additives are recognized in the art as suitable additives for this type of composition (*for the production of fuel tanks*). In light of this, it has been found that the selection of a known material based on its suitability for its intended use supports a *prima facie* obviousness determination – *see MPEP 2144.07*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include the instantly claimed additives, as taught by Hata et al., in the composition of Krass et al. because the teachings of Hata et al. demonstrate that these additives are recognized in the art as suitable additives for this type of composition (*for the production of fuel tanks*).

Double Patenting

11. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re*

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Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

12. The provisional rejection of claims 1-7 and 15-17 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over the combined limitations of claims 1-17 of copending Application No. 11/578,078 (US 2007/0290176) stands. Although the conflicting claims are not identical, they are not patentably distinct from each other because: the copending claims disclose the instantly claimed "hardener" as component "d". Furthermore, the use of the instantly claimed additives in concert with this "hardener"/"d" would have been obviously envisaged in light of the specification (*see paragraph 0063 of the pre-publication*) – *See: In re Vogel*, 422 F.2d 438, 441-42, 164 USPQ 619, 622 (CCPA 1970); MPEP 804, II, B, 1.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

13. The provisional rejection of claims 1-4, 7, and 15-20 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over the combined limitations of claims 1-24, 26, and 27 of copending Application No. 11/578,470 (US 2007/0260030) stands. Although the conflicting claims are not identical, they are not patentably distinct from each other because: the copending claims disclose the instantly claimed "hardener" (*also method of making and method of using*) as a "particulate, polybranched organic/inorganic hybrid polymer".

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Furthermore, copending claim 27 (*use of said material for crosslinking thermoset plastics*) obviously embraces epoxy resins, which is a commonly recognized thermosetting material.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

14. The provisional rejection of claims 1-4, 7, and 15-20 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over the combined limitations of claims 1, 2, and 4 of copending Application No. 11/578,471 (US 2008/0039607) stands. Although the conflicting claims are not identical, they are not patentably distinct from each other because: the copending claims disclose the instantly claimed "hardener" (*also method of making and method of using*) as a "particulate, polybranched organic/inorganic hybrid polymer". Furthermore, copending claim 4 (*use of said material for crosslinking thermoset plastics*) obviously embraces epoxy resins, which is a commonly recognized thermosetting material.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

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Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Feely whose telephone number is (571)272-1086. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Y. Pyon can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael J Feely/
Primary Examiner, Art Unit 1796

May 31, 2009